

Testimony by  
**John A. Helms**  
**Professor Emeritus of Forest Science**  
**University of California, Berkeley**  
**Representing the**  
**Society of American Foresters**  
**Before the House Agriculture Committee**  
**on Forest Health**  
April 30, 2003

Mr. Chairman and members of the Committee, my name is John Helms and I am Professor Emeritus of Forest Science at the University of California, Berkeley. I am here today representing the Society of American Foresters. The Society has more than 17,000 members dedicated to advancing the science, technology, education, and practice of forestry in the United States for the benefit of society at large. One of our core values is sustaining forest resources by simultaneously meeting environmental, economic, and societal goals and constraints. I am pleased to have this opportunity to testify on the important topic of forest health.

1. What is meant by Forest Health?

Forest health is difficult to define. The concept is imprecise, value laden, and controversial. There are at least 18 different definitions in the literature. The Society of American Foresters holds the view that forest health is a perceived condition involving consideration of such factors as age, structure, composition, function, vigor, and unusual levels of insect and disease activity. Potentially, forest health involves considering the status of all ecosystem components.

Consideration of forest health also involves what constitutes a 'forest'. More precisely, we should decide whether we are really concerned about the health of trees, stands, or forests. That is, we need to decide the spatial scale over which health is being considered. For example, an individual tree, or a stand of trees, could be deemed unhealthy, but the forest as a whole could be viewed as healthy.

Similarly, we must consider temporal aspects -- whether health is being considered at one point in time, over a period of decades, or over centuries. For example, following a windstorm or insect attack a forest stand may be perceived as unhealthy, however a decade or two later it could likely regain the attributes of health.

Basically, tree health, stand health or forest health is a function of resilience to withstand stress or capacity to recover from disturbance.

It is helpful to regard forest health as similar to human health. Differing interpretations can be made depending on the physiological, functional, or performance standards chosen and whether we are concerned about the health of people, suburbs, cities, or

regions and over what time scales. Similar to human health, the health of a forest is a function of its past history and current condition. It is essential that concepts of time, age and spatial distribution be integral to any discussion of forest health.

2. Issues of Forest Health Vary by Forestland Ownership and Management Objective

Forestland in the United States is owned by a mix of federal, state, industrial, families, tribal, and trust institutions or people. Each of these owners has different objectives and responsibilities for land management and therefore their forests have different structural attributes. In addition, forestland is commonly fragmented with boundaries based on usage rather than ecological entities. Consequently, forest health issues commonly differ among ownerships as well as among forest types, climate, and past usage and are therefore commonly unique and require individual professional analysis and prescription.

3. Precise Communication Requires Agreement on Definition

Forest health is a complex concept that is interpreted differently depending on viewpoint. It is, therefore, imperative to agree on which definition or interpretation is to be used before one can conduct a meaningful discussion or craft satisfactory legislation.

4. Forest Health is Primarily a Function of Stand Density

Of all characteristics of forest condition, the dominant factor determining vigor is stand density, or the number of trees per unit area. In dense, unmanaged stands, or as a result of fire exclusion policies, trees are often close together and have small crowns and root systems. These stands have low vigor and are susceptible to drought, insects/disease, and catastrophic wildfire. Under these stressful conditions, tree mortality can be extremely high.

5. Unhealthy Stands are High Risk

Natural stand development from regeneration to maturity includes a period, commonly of numerous decades or a century depending on site quality, characterized by high, natural tree mortality and reduction in tree number from many thousands per acre to perhaps a hundred. This is a high-risk period when the stand is very susceptible to wildfire and insect/disease mortality. In modern times when our forests are fragmented, contain dependent rural communities and other assets, and have intrinsic values for wildlife, aesthetics, and recreation, it is not acceptable to allow forest stands to remain in an unhealthy, high-risk condition.

6. Forest Management can enhance the Health of Forests

It has been demonstrated that prudent forest management and stewardship can lower the risk of unacceptable loss of property and resource assets through judicious thinning and prescribed burning. Adaptive, collaborative approaches can lead to sustainable forest management. A healthy forest is a sustainable forest.

7. Research and Monitoring

Prudent forest management leading to healthy, sustainable forests requires investment in research and monitoring. Increased research effort is critically needed to obtain new knowledge on how to develop and maintain healthy forests. Investments must be made to monitor suitable indicators of forest health to enable effective adaptive management.

8. Issues facing forest managers today.

While forest health is not an easy term to define, and it is difficult to gain consensus as to how and what should be addressed, there are certain actions Congress and the Administration can take to give forest managers the tools to improve conditions on the national forests and private lands, while maintaining both environmental protections and public participation. Many of the laws that apply to federal forest management are outdated and need revision to ensure consistency with court decisions, other environmental laws, advances in science, and changes in public attitudes and values. Changes are also needed in a number of regulatory measures that often cause unnecessary delays that can be detrimental to time sensitive forest management projects. We are encouraged by the efforts taken to this date made through the 2002 Farm Bill and the Healthy Forests Initiative. However, a long-term solution that would change both regulations and laws is needed on both public and private lands. We will continue to offer our support to address questions and concerns.

9. Forest Health and Productivity: A Perspective of the Forestry Profession

I am leaving for your records a copy of the 1997 SAF publication *Forest Health and Productivity: A Perspective of the Forestry Profession* that resulted from several years of study and discussion by the Society and remains extremely relevant to current issues of forest health. Mr. Chairman, this concludes my testimony and I thank you for the opportunity to appear before your committee.